

What is claimed is:

- 1 1. A method to assemble a daughter-card support to a motherboard substrate,
2 comprising:
3 assembling one or more electrical components on said motherboard substrate;
4 assembling one or more electrical components on each of one or more daughter-
5 card substrates;
6 attaching said daughter-card support to said motherboard substrate; and
7 attaching said one or more daughter-card substrates to said daughter-card
8 support, wherein said daughter-card support maintains each of said one or more
9 daughter-cards in a fixed position relative to said motherboard substrate.
- 1 2. The method of claim 1, wherein said motherboard substrate and said one or
2 more daughter-card substrates are selected from the group of substrates consisting of: a
3 printed circuit board (PCB), a multi-chip module (MCM), and a flexible substrate.
- 1 3. The method of claim 1, wherein said daughter-card support further comprises
2 one or more electrical connections to a daughter-card substrate.
- 1 4. The method of claim 1, wherein said daughter-card support is fabricated from a
2 material selected from the group of materials consisting of: a stainless steel alloy, a
3 magnesium alloy, an aluminum alloy, a plastic, or a composite.
- 1 5. The method of claim 1, wherein said daughter-card support has a "spine and
2 rib" style of architecture.
- 1 6. The method of claim 1, wherein said daughter-card support has one or more L-
2 shaped brackets to hold one or more card edges of said one or more daughter-cards.
- 1 7. The method of claim 1, wherein said daughter-card support allows hand
2 replacement of one or more daughter-card substrates.

- 1 8. A method to fabricate a daughter-card support, comprising:
2 selecting a set of physical dimensions of said daughter-card support;
3 modeling said daughter-card support after insertion of a daughter-card substrate;
4 estimating a more precise set of physical dimensions for said daughter-card
5 support after modeling said daughter-card support with an inserted daughter-card
6 substrate; and
7 shaping said daughter-card support according to said more precise set of
8 physical dimensions.
- 1 9. The method of claim 8, wherein said motherboard substrate and said one or
2 more daughter-card substrates are selected from the group of substrates consisting of: a
3 printed circuit board (PCB), a multi-chip module (MCM), and a flexible substrate.
- 1 10. The method of claim 8, wherein said daughter-card support further comprises
2 one or more electrical connections to a daughter-card.
- 1 11. The method of claim 8, wherein said daughter-card support is fabricated from a
2 material selected from the group of materials consisting of: a stainless steel alloy, a
3 magnesium alloy, an aluminum alloy, a plastic, or a composite.
- 1 12. The method of claim 8, wherein said daughter-card support has one or more L-
2 shaped brackets to hold one or more card edges of said one or more daughter-cards.
- 1 13. An assembled substrate, comprising:
2 a motherboard substrate, including one or more electrical components;
3 one or more daughter-card substrates, wherein at least one of said daughter-card
4 substrates includes one or more electrical components; and
5 a daughter-card support to structurally support said one or more daughter-card
6 substrates in fixed orientations relative to said motherboard substrate.

- 1 14. The assembled substrate of claim 13, wherein said motherboard substrate and
2 said one or more daughter-card substrates are selected from the group of substrates
3 consisting of: a printed circuit board (PCB), a multi-chip module (MCM), and a
4 flexible substrate.
- 1 15. The assembled substrate of claim 13, wherein said daughter-card support further
2 comprises one or more electrical connections to a daughter-card.
- 1 16. The assembled substrate of claim 13, wherein said daughter-card support is
2 fabricated from a material selected from the group of materials consisting of: a
3 stainless steel alloy, a magnesium alloy, an aluminum alloy, a plastic, or a composite.
- 1 17. The assembled substrate of claim 13, wherein said daughter-card support has a
2 "spine and rib" style of architecture.
- 1 18. The assembled substrate of claim 13, wherein said daughter-card support has
2 one or more L-shaped brackets to hold one or more card edges of said one or more
3 daughter-cards.
- 1 19. The assembled substrate of claim 13, wherein said daughter-card support allows
2 hand replacement of one or more daughter-card substrates.
- 1 20. The assembled substrate of claim 13, wherein said daughter-card support has a
2 plurality of air-flow channels, wherein each air-flow channel includes one or more
3 holes.